

What is claimed is:

1. An apparatus for monitoring and preventing leakage of process cooling water in a furnace, wherein a bellows used to deliver the process cooling water, and comprises:

5        a tray under the bellows, wherein the tray comprises:

an anti-leak dish, wherein the anti-leak dish can receive the process cooling water in leaking; and

a shelter plate obliquely connecting to a side of the anti-leak dish, wherein the shelter plate can block the process cooling water sprinkling toward the wafers.

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2. The apparatus for monitoring and preventing leakage of the process cooling water according to claim 1, wherein the bellows is a metal bellows.

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3. The apparatus for monitoring and preventing leakage of the process cooling water according to claim 1, further comprises a protecting tubing covering the bellows.

4. The apparatus for monitoring and preventing leakage of the process cooling water according to claim 3, wherein the protecting tubing is a heat shrinkable tubing.

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5. The apparatus for monitoring and preventing leakage of the process cooling water according to claim 3, wherein the protecting tubing is a teflon tubing.

6. The apparatus for monitoring and preventing leakage of the process cooling water according to claim 1, wherein the material of the anti-leak dish is stainless steel.

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7. The apparatus for monitoring and preventing leakage of the process cooling water according to claim 1, wherein the material of the shelter plate is stainless steel.

8. The apparatus for monitoring and preventing leakage of the process cooling water according to claim 1, further comprises a sensor located on the anti-leak dish, wherein the sensor can send a signal while the process cooling water leaking on the anti-leak dish.

9. The apparatus for monitoring and preventing leakage of the process cooling water according to claim 8, wherein the sensor comprises two conductive lines which are not electrically connected normally, and the conductive lines are electrically connected and send the signal while the process cooling water in leaking contacting the conductive lines.

15 10. The apparatus for monitoring and preventing leakage of the process cooling water according to claim 8, further comprises a detector electrically connecting to the sensor, wherein the detector can receive the signal sent by the sensor and send a warning signal.

20 11. An apparatus for monitoring and preventing leakage of process cooling water in a furnace comprises:

a bellows used to deliver the process cooling water and covered with a protecting tubing;

a tray under the bellows, wherein the tray comprises:

25 an anti-leak dish, wherein the anti-leak dish can receive the process cooling

water in leaking; and

a shelter plate obliquely connecting to a side of the anti-leak dish, wherein the shelter plate can block the process cooling water sprinkling toward the wafers; and

5 a sensor located on the anti-leak dish, wherein the sensor can send a signal while the process cooling water leaking on the anti-leak dish.

12. The apparatus for monitoring and preventing leakage of the process cooling water according to claim 11, wherein the protecting tubing is a heat-shrinkable tubing  
10 or a teflon tubing.

13. An apparatus for monitoring and preventing leakage of process cooling water in a furnace comprises:

a receiving device used to receive the process cooling water in leaking; and

15 a sensor located on the receiving device, wherein the sensor can send a signal while the process cooling water leaking on the receiving device.

14. The apparatus for monitoring and preventing leakage of the process cooling water according to claim 13, wherein the receiving device comprises a tray.

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15. The apparatus for monitoring and preventing leakage of the process cooling water according to claim 14, wherein the tray comprises:

an anti-leak dish, wherein the anti-leak dish can receive the process cooling water in leaking; and

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a shelter plate obliquely connecting to a side of the anti-leak dish, wherein the

shelter plate can block the process cooling water sprinkling toward the wafers.

16. The apparatus for monitoring and preventing leakage of the process cooling water according to claim 15, wherein the material of the anti-leak dish is stainless steel.

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17. The apparatus for monitoring and preventing leakage of the process cooling water according to claim 15, wherein the material of the shelter plate is stainless steel.

18. The apparatus for monitoring and preventing leakage of the process cooling water according to claim 13, wherein the sensor comprises two conductive lines which are not electrically connected normally, and the conductive lines are electrically connected and send the signal while the process cooling water in leaking contacting the conductive lines.

15 19. The apparatus for monitoring and preventing leakage of the process cooling water according to claim 13, further comprises a detector electrically connecting to the sensor, wherein the detector can receive the signal sent by the sensor and send a warning signal.

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